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Patent 0-05-111 - 15331/US/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Josef et al.
Serial no.: N/A
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Title: SOLUBLE FERTILIZER COMPOSITIONS COMPRISING
CALCIUM AND/OR MAGNESIUM PHOSPHATES
Examiner: N/A
Art Unit: N/A

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Dear Sir/Madam:

Preliminary Amendment

This preliminary amendment is being submitted to present the claims in U.S. format instead of the European type format that can be found in the original submission. Applicant has not altered the scope or breadth of these claims. These claims start at page 2 of this document.

Respectfully submitted
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1. (Original) Fertilizer formulations comprising:

I) a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof;

II) an alkali metal phosphate (MALP) AH_2PO_4 ;

III) Phosphoric Acid (PA) H_3PO_4 .

2. (Original) Fertilizer formulations according to claim 1, wherein the alkali metal phosphate MALP is Monopotassium Phosphate (MKP) KH_2PO_4 .

3. (Currently Amended) Fertilizer formulations according to claim 1 ~~or~~ 2, wherein
a) the alkali metal phosphate MALP is in a molar ratio to PA that is at least the ratio corresponding to the double salt $\text{AH}_5(\text{PO}_4)_2$.

4. (Original) Fertilizer formulations according to claim 1, wherein the ratio $\text{A}_2\text{O}:\text{P}_2\text{O}_5$, wherein the P_2O_5 does not comprise that included in phosphate moieties of the earth-alkali metal phosphates, is from about 0.50 to about 0.80.

5. (Original) Fertilizer formulations according to claim 1, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the formulations, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5, if the earth-alkali metal is magnesium.

6. (Original) Fertilizer formulations according to claim 5, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the formulations, is about 1:4.8 if the earth-alkali metal is calcium, and about 1:3.8, if the earth-alkali metal is magnesium.

7. (Currently Amended) Fertilizer compositions comprising:

a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof, and an alkali metal double salt $\text{AH}_5(\text{PO}_4)_2$, wherein $\text{A} = \text{K}, \text{Na},$ or NH_4 .

8. (Original) Fertilizer compositions according to claim 7, further comprising an alkali metal phosphate (MALP) AH_2PO_4 .

9. (Original) Fertilizer compositions according to claim 7, wherein the alkali metal double salt is $\text{KH}_5(\text{PO}_4)_2$.

10. (Original) Fertilizer compositions according to claim 8, wherein the alkali metal phosphate MALP is Monopotassium Phosphate (MKP) KH_2PO_4 .

11. (Currently Amended) Fertilizer compositions according to claim 7, ~~8 or 9~~, wherein the molar ratio of CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the compositions, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5, if the earth-alkali metal is magnesium.

12. (Original) Fertilizer compositions according to claim 11, wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein the $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the compositions, is about 1:4.8 if the earth-alkali metal is calcium, and is about 1:3.8, if the earth-alkali metal is magnesium.

13. (Original) Fertilizer compositions according to claim 11, wherein the molar ratio of MALP to $\text{AH}_5(\text{PO}_4)_2$ is from zero to 60%.

14. (Currently Amended) Process for the preparation of ~~the~~ fertilizer compositions ~~of the invention~~, which comprises the steps of preparing a fertilizer formulation comprising: I) a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof; II) an alkali metal phosphate (MALP) AH_2PO_4 ; and III) Phosphoric Acid (PA) H_3PO_4 ~~according to any one of claims 1 to 6~~; introducing said formulation into a drying oven of a material resistant to the components of said formulation

(particularly to the PA); and mechanically homogenizing said formulation while concurrently drying it by heating under a vacuum.